

REMARKS:

The claims in the application remain 21-55.

Favorable reconsideration of the application as amended is respectfully requested.

Claims 22, 23 and 53-55 have been amended to eliminate the objections raised in paragraph 7 of the Office Action. In this regard, it is respectfully submitted Claim 41 presently contains accurate recitation as this claim is directed to using the inventive device as an optical receive, optical modulator or spectrometer, as described, e.g., at the bottom of page 1 of the application. Accordingly, there is no need to further revise Claim 41 at this time. In this regard, it is respectfully submitted there is no need to submit an additional figure illustrating a "spectrometer" (as requested in paragraph 3 of the Office Action) as the entire inventive device, as illustrated, can function as a spectrometer.

Claim 50 has been allowed in paragraph 20 of the Office Action, while Claim 44 has been indicated allowable if amended into independent form in paragraph 22 of the Office Action. Accordingly, Claim 44 has been amended into independent form herein. The specification has been corrected and Abstract revised as requested in paragraphs 5 and 6 of the Office Action. Additionally, a replacement Fig. 5 is enclosed, in accordance with the suggestion in paragraph 2 of the Office Action.

Concerning the enablement rejection of Claims 22, 23, 43 and 45 under 35 U.S.C. §112, first paragraph, raised in paragraph 10 of the Office Action, the recitation "further optical transmission line" has been deleted from independent Claim 22 (this recitation does not appear in Claims 23, 43 and 45). Claim 45 has been amended as

suggested in paragraph 11 of the Office Action to eliminate the enablement rejection under 35 U.S.C. §112, first paragraph, of that claim. The remaining dependent Claims have all been amended to change the recitation “wavelength-dependent” element 11-14 to – angular dispersive – element 11-14 and which finds support throughout the present application and drawings. For example, the present application discloses the “wavelength-dependent” element as any of a grating, hologram, system of thin films, a prism or an acousto-optical modulator.

Regarding the enablement rejection of Claim 54 under 35 U.S.C. §112, first paragraph, raised in paragraph 12 of the Office Action, it is respectfully pointed out that as extensively-described in the present application and drawings, it is unnecessary to spatially separate the optical channels. Thus, the inventive device attains high spectral resolution despite small size. As clearly shown, in the figures, the different optical channels, i.e., the different wavelengths, are not intended to be spatially separated. The angular dispersive element, i.e., prism 12 in Fig. 2 or grating 11 in Figs. 3 and 4, changes the angle of the transmitted or refracted beam according to wavelength. The beam has a certain diameter with the angular variation naturally being small.

If the angularly-dispersed beams are followed to infinite distance, then there would be spatial separation; if the beams were refocused, then there would be spatial separation of the beams in the focal plane. However, near the angular dispersive element 11-14, the beam possesses angular dispersion according to variation in wavelength, with the different optical channels, i.e., different wavelengths, clearly not spatially separated. Thus, according to the operating principles of the present invention, it is possible to detect a certain interference pattern according to a certain

wavelength (Figs. 1a and b), even with superimposing a multitude of other interference patterns (Figs. 2c and d), without need to spatially separate the different wavelengths or optical channels.

Furthermore, with respect to the enablement rejection of Claims 54 and 55 under 35 U.S.C. §112, first paragraph, raised in paragraph 12 of the Office Action, it is respectfully pointed out Figs. 2-4 (and the accompanying description in the specification) most certainly illustrate heterodyne detection because the part of the incoming light, after modulation, is used as an additional local source. Accordingly, the only outstanding issue is the art rejection of the claims.

Claims 21, 27, 28, 30, 33, 38, 39, 41, 42, 53 and 55 have been rejected under 35 U.S.C. §102(b) as being anticipated by previously-cited U.S. Pat. No. 3,469,923 to Mertz and Hecht et al, "Optics," (1974) pp. 37-38, 62-65, 189-190 and 286-290 in paragraph 15 of the Office Action, while Claims 34 and 40 have been rejected under 35 U.S.C. §103 as obvious over these two references in paragraph 17 of the Office Action. Claims 22, 23 and 43 have been rejected under 35 U.S.C. §103(a) as obvious over U.S. Pat. No. 4,533,247 to Epworth in view of Hecht et al. in paragraph 18 of the Office Action.

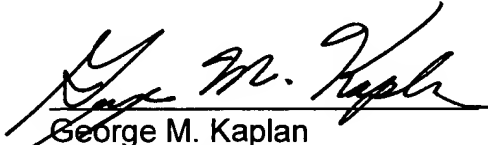
As pointed out *supra*, the requisite independent claims have been amended to change the recitation "wavelength -dependent" element(s) to angular dispersive element(s). The interferometric setups of Mertz and Hecht et al clearly do not show an angular dispersive optical element. Moreover, any angular dispersion that might be introduced into these setups would be incompatible with the explained mode of operation of these setups and prevent those setups from generating the desired

modulation of the output signal according to the introduced variations of the optical pathlengths. Epworth adds nothing to Mertz and/or Hecht et al which would render obvious the present invention in this regard.

Accordingly, in view of the forgoing amendment, accompanying remarks and explicit statements in the Office Action, it is respectfully submitted all claims pending herein are in condition for allowance. Please contact the undersigned attorney should there be any questions. A petition for an automatic two month extension of time for response under 37 C.F.R. §1.136(a) is enclosed in triplicate together with the requisite petition fee and fee for additional independent claim.

Early favorable action is earnestly solicited.

Respectfully submitted,

  
George M. Kaplan  
Registration No. 28,375  
Attorney for Applicant(s)

DILWORTH & BARRESE LLP.  
333 Earle Ovington Blvd.  
Uniondale, NY 11553  
(516) 228-8484